A LIST OF THE CROCODILES, TORTOISES, TURTLES AND LIZARDS AT PRESENT KNOWN TO INHABIT SIAM.

By Malcolm Smith, M.R.C.S., L.R.C.P.

The following list comprising 4 crocodiles, 21 tortoises and turtles, and 66 lizards, cannot by any means be considered to represent the total number of species which will ultimately be found to inhabit this country. Of the fresh-water tortoises and turtles of Siam proper, practically nothing is yet known, whilst in the large family of lizards, particularly among the geckoes and the smaller species of skinks, many forms must still remain to be discovered.

Numerous additions have been made since Stanley Flower compiled his list in 1899, the last naturalist to make a complete list of the reptiles of Siam. Most of these additions are from the Peninsula, and have been incorporated in Mr. Boulenger's recent work on the Reptiles of the Malay Peninsula.

Acanthosaura horrescens and *Isopachys gyldenstolpei* were discovered by Count Gyldenstolpe in 1914, and described this year (Results of the Swedish Zoological Expedition to Siam, II, Lizards).

I have added 1 tortoise and 17 lizards to the list myself, amongst which may be mentioned *Gymnodactylus oldhami*, *Lygosoma olivaceum*, *L. vittigerum*, *L. laterale*, and *Tropidophorus yunnanensis* and *cochinchinensis*, together with the four new species which have already been described in the pages of this Journal. The remainder, although not definitely recorded from the country before, might, from their previously known distribution, have been reasonably expected to occur here.

Certain changes in nomenclature have been made, which are as follows.

Cyclemys annandalii becomes the type of a new genus. The skull of this tortoise, in its absence of a bony temporal arch, resembles *Geoemyda*, but in other characters it differs sufficiently to merit separation from it, and to be placed by itself. For this new genus Mr. Boulenger has proposed the name *Hieremys*, as the original specimens which I sent him and upon which he based the genus had been obtained from the Chinese Temple in the Wat Mahan Road, Bangkok.

Lygosoma præsigne is removed from its present position and placed under *Mabuia*.

Acanthosaura crucigera is united with *A. armata*,

My thanks are due to Mr. G. A. Boulenger, F. R. S., for his help on several points in connection with this paper, and for his kind and courteous assistance on numerous occasions in assisting me in the diagnosis of specimens which I have sent him.

The distributions here recorded, refer, of course, to our present knowledge, and must by no means be considered as final.

The geographical divisions used are those proposed by Mr. Boden Kloss in this Journal (Vol. 1, p. 250). I have used the term South-western for that portion of Western Siam, south of the Petchaburi river.

Bangkok, May, 1916.

EMYDOSAURIA.

CROCODILIDÆ.

1. TOMISTOMA SCHLEGELII (S. Mull.).

Inland Sea (Peninsular Siam).

2. CROCODILUS POROSUS Schneid.

Common in most of the large estuaries opening into the Gulf, at any rate as far south as Bandon. Not found in the River Chao Praya.

3. CROCODILUS PALUSTRIS Lesson.

Rivers of Central and Western Siam in suitable localities. The existence of the Marsh Crocodile in the Malay Peninsula is doubtful, and I have not yet been able to trace it in Siam further south than the Quaa Noi river, north of Lat. 14°.

4. CROCODILUS SIAMENSIS Schneid

Eastern Siam.

CHELONIA.

TRIONYCHIDÆ.

1. TRIONYX CARTILAGINEUS (Bodd).

Rivers of Central, South-eastern and Peninsular Siam, where it is not uncommon.

2. Trionyx hurum Gray.

Recorded from Bandon (Peninsular Siam), with doubt. (Rob. and Kloss, Journ. Fed. Malay States Mus., V, p. 152).

3. Pelochelys cantoris Gray.

River Chao Praya (Central Siam), with doubt. (Flower, P. Z. S., 1899, p. 621).

TESTUDINIDÆ.

4. Testudo emys Schleg. & Müll.

Hills of Western and Peninsular Siam.

5. Testudo elongata Blyth.

Western, South-eastern and Peninsular Siam. Common in suitable localities.

6. Testudo latinuchalis (Vaill.)

Chantabun (South-eastern Siam).

7. Geoemyda spinosa (Gray).

Nakon Sritamarat and Patani (Peninsular Siam).

8. Geoemyda grandis Gray.

Central, Western and Peninsular Siam. Fairly common.

HIEREMYS, genus nov.

Allied to *Geoemyda* in the absence of a bony temporal arch, but differing from it in the much broader alveolar surface to the jaws, in the deeply serrated margins to the jaws, and in the broader digital webs.

From *Cyclemys* it may be distinguished by the want of a bony temporal arch, by the plastron being united to the carapace by suture instead of ligamentous hinge, and by the absence of any hinge between the hyo- and hypoplastral bones.

Type. *Hieremys annandalei* (*Cyclemys annandalei* Blgr.), from Patani.

9. Hieremys annandalei (Blgr.).

Cyclemys annandalii, Blgr., Fascic. Malay., Zool. I., p. 142, (1903); id., Rept. Malay Penin., p. 19 (1912); Rob. and Kloss, Journ. Fed. Malay States Mus., V. p. 153 (1914).

Peninsular Siam and (?) River Chao Praya (Central Siam).

10. Cyclemys platynota (Gray).

Patani (Peninsular Siam).

11. Cyclemys dhor (Gray).

Widely distributed. Common in certain localities.

12. Cyclemys amboinensis (Daud.).

Central and Peninsular Siam. Common round Bangkok.

13. Cyclemys mouhoti Gray.

Eastern Siam.

14. Bellia crassicolis (Gray).

Central, South-western and Peninsular Siam. Not uncommon round Bangkok.

15. Damonia subtrijuga (Schleg. and Müll.).

Central and Peninsular Siam. Common round Bangkok.

16. Callagur picta Gray.

River Chao Praya (Central Siam), with doubt. (Flower, P.Z S., 1899, p. 610).

17. Batagur baska (Gray).

Patani (Peninsular Siam).

18. Platysternum megacephalum Gray.

Western and (?) Northern Siam.

Chelonidæ.

19. Chelone mydas (Linn.).

Gulf of Siam. Very common.

20. Chelone imbricata (Linn.).

Gulf of Siam. Common.

21. Thalassochelys caretta (Linn.).

Gulf of Siam, with doubt. (Flower, P. Z. S., 1899, p. 618).

LACERTILIA.

Geckonidæ.

1. Gymnodactylus marmoratus (Fitz.).

Patani (Peninsular Siam).

2. Gymnodactylus pulchellus (Gray)

Patani and Nakon Sritamarat (Peninsular Siam).

3. Gymnodactylus peguensis Blgr.

Patelung and Nakon Sritamarat (Peninsular Siam), Sai Yoke district (Western Siam).

4. Gymnodactylus oldhami Theob.

Patiyu (Peninsular Siam).

5. Gonatodes kendalli (Gray).

Patiyu (Peninsular Siam).

6. Gonatodes affinis (Stol.).

Patani (Peninsular Siam).

7. Phyllodactylus siamensis Blgr.

Widely distributed; extending into the Peninsula as far South as Bangsaphan, Lat. 11° 13'. Very common in some localities.

8. Hemidactylus frenatus Dum. & Bib.

Common almost everywhere.

9. Hemidactylus platurus (Schneid).

Common almost everywhere.

10. Lepidodactylus ceylonensis Blgr.

Klong Menao (South-eastern Siam).

11. Mimetozoon craspedotus (Mocq.).

Island of Samui (Peninsular Siam).

12. Gehyra mutilata (Wiegm.).

Common almost everywhere.

13. Gecko verticillatus Laur.

Common, and widely distributed.

14. Gecko stentor (Cantor,)

Rhaman (Peninsular Siam).

15. Ptychozoon homalocephalum (Creveldt).

Hup Bon, near Sriracha, and Chantabun (South-eastern Siam); Dong Rek Mountains (Eastern Siam); Patani (Peninsular Siam).

Agamidæ.

16. Draco volans Linn.

Peninsular Siam as far north as Nakon Sritamarat.

N.B.—My reference to this species from the Sai Yok district (Vol. 1, p. 153, of this Journal) is an error for *D. maculatus*.

17. Draco maculatus Gray.

Widely distributed throughout the country except towards the South-east, where it is replaced by the following.

Draco maculatus haasii Smith and Kloss.

South-eastern Siam and the Dong Rek range.

18. Draco fimbriatus Kuhl.

Patani and Nakon Sritamarat (Peninsular Siam).

19. Draco punctatus Blgr.

Patani (Peninsular Siam).

20. Draco cyanolæmus Blgr.

Bandon (Peninsular Siam).

21. Draco formosus Blgr.

Peninsular and Western Siam as far north as Lat. 11° 30′.

22. Draco tæniopterus Günth.

South-eastern Siam ; Dong Rek Mountains (Eastern Siam) ; Muang Song forest, Pre (Northern Siam).

23. Draco blanfordi Blgr.

Peninsular Siam ; Sai Yok district (Western Siam); Muang Song forest, Pre (Northern Siam).

24. Draco melanopogon Blgr.

Nakon Sritamarat (Peninsular Siam).

25. Draco microlepis Blgr.

Island of Pennan (Peninsular Siam).

26. Draco quinquefasciatus Gray.

Patani and Trang (Peninsular Siam).

27. Gonycephalus borneensis (Schleg.)

Bandon (Peninsular Siam).

28. Acanthosaura armata (Gray).

Acanthosaura crucigera, Blgr., Cat. Liz. Brit. Mus. 1, p. 302 (1885) ; id., Fauna Brit. Ind., Rept., p. 125 (1890); id., Rept., Mal. Penin., p. 68 (1912): Smith, Jour. Nat. Hist. Soc. Siam, I, p. 154 (1915).

Widely distributed ; common in the southern parts of the country in suitable jungle.

A series of 19 specimens of this very variable lizard, taken recently in the Mountains of Nakon Sritamarat, showed all gradations in the length of post-orbital and nuchal spines. The reason for this variation was not entirely clear. As one would expect, the spines were usually better developed in the male than in the female, and in the adult than in the young, but even when these two factors had been eliminated there still remained considerable differences to which no cause could be assigned. On the evidence of this fine series, taken from a single locality, *A. crucigera* is no longer tenable as a separate species, but should be united with *A. armata*, which is the older name.

29. Acanthosaura horrescens Lönnberg.

Recently obtained by Count Gyldenstolpe in Northern Siam.

30. Acanthosaura capra Günth.

Chantabun (South-eastern Siam).

31. Acanthosaura coronata Günth.

Chantabun (South-eastern Siam).

32. Calotes cristatellus (Kuhl).

Peninsular Siam and Western Siam as far north as Sai Yok.

33. Calotes floweri Blgr.

Chantabun (South-eastern Siam).

34. Calotes versicolor (Daud.)

Common almost everywhere.

35. Calotes emma Gray.

Common, and widely distributed. Not found in Bangkok.

36. Calotes mystaceus Dum. & Bib.

Common, and widely distributed; extends into the Peninsula as far south as Bangsaphan, Lat. 11° 13′. Not found in Bangkok.

37. Physignathus mentager Günth.

South-eastern Siam and the Dong Rek range.

38. Liolepis belliana (Gray).

Widely distributed. Usually very common wherever there is sandy soil.

Varanidæ.

39. Varanus flavescens (Gray).

Trang (Peninsular Siam).

40. Varanus nebulosus (Gray).*

Widely distributed. Not uncommon in evergreen jungle.

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* Lönnberg (Results of the Swedish Zoological Expedition to Siam, Band 55, No. 4, p. 8 (1916), has recorded a species of monitor from Koh Lak, which he considers may possibly be V. *dumerilii* (S. Müll.), owing to the presence of slight keels on the ventral scales, although in other respects, he states, it agrees with V. *nebulosus*. I have examined a number of specimens of V. *nebulosus*, both alive and dead, and have found that many adults show more or less distinct traces of a keel on the ventral scales. It is more evident in preserved specimens that in life.

41. Varanus rudicollis Gray.

Trang (Peninsular Siam).

42. Varanus salvator (Laur.)

Widely distributed, but not recorded from the North. Common round Bangkok.

Lacertidæ.

43. Tachydromus sexlineatus Daud.

Central, Eastern and Peninsular Siam. Found in Bangkok.

Scincidæ.

44. Mabuia macularia (Blyth).

Common. and widely distributed. Rare in Bangkok.

45. Mabuia multifasciata (Kuhl).

Common, and widely distributed. Common in Bangkok.

46. Mabuia siamensis (Günth.)

Widely distributed, but not as common as the preceding species.

47. Mabuia longicaudata (Hallow).

Siam. (Blgr., Cat. Liz. Brit. Mus., III, p. 189).

48. Mabuia præsigne (Blgr).

Lygosoma præsigne, Blgr., Ann. and Mag. Nat. Hist. (7), VI, p. 191 (1900) ; id., Fascic. Malay, Zool, I., p. 159 (1903) ; id., Journ. Fed. Mal. St. Mus., III, p. 67 (1908) : id., Rept. Malay Penin., p. 88 (1912).

The pterygoid bones being entirely separated, and the palatal notch extending forwards as far as a line connecting the centres of the eyes, this species should be placed under *Mabuia* instead of under *Lygosoma* as hitherto, although its affinities, notably the absence of supranasals, are with the latter genus. The evidence for this transfer is based upon specimens obtained last year in the Mountains of Nakon Sritamarat, and now lodged in the British Museum.

49. Lygosoma indicum (Gray).

Hills near Pre (Northern Siam).

50. Lygosoma tersum Smith.

Mountains of Nakon Sritamarat (Peninsular Siam).

51. Lygosoma maculatum (Blyth).

Widely distributed. Very common in some localities. Not found in Bangkok.

52. LYGOSOMA OLIVACEUM (Gray).

South-eastern, Western and Peninsular Siam.

53. LYGOSOMA BOWRINGII (Günth).

Common, and widely distributed. Rare in Bangkok.

54. LYGOSOMA HERBERTI Smith.

Nakon Sritamarat (Peninsular Siam).

55. LYGOSOMA VITTIGERUM Blgr.

Widely distributed, but apparently nowhere common.

56. LYGOSOMA RUPICOLA Smith.

Chong Kae, Paknampo (Central Siam); Hin Lap (Eastern Siam).

57. LYGOSOMA MELANOSTICUM Blgr.

Chantabun (S. E. Siam); Nakon Sritamarat (Peninsular Siam); and (?) Bangkok (cf. Flower, P.Z.S., 1899, p. 650).

58. LYGOSOMA LATERALE (Say).

Lygosoma reevesii (Gray), Blgr., Cat Liz. Brit. Mus., III, p. 264.

Dong Rek Mountains, where it is not uncommon.

Lygosoma reevesii from China and Siam, presenting characters indentical with *Lygosoma laterale* from North America, cannot be separated from it, and the Asiatic form has therefore been placed by Mr. Boulenger under *laterale*, which is the older name. It is unlikely that this skink has been carried across the Pacific, but considering the close affinities which many members of this large family bear to each other, it is possible that the two forms have been produced independently.

59. LYGOSOMA QUADRIVITTATUM Peters.

Patani (Peninsular Siam).

60. LYGOSOMA CHALCIDES (Linn.).

Widely distributed. Not uncommon in Bangkok.

61. LYGOSOMA ISODACTYLUM (Gnthr.).

From Aynthia to Paknampo (Central Siam), following the railway line.

62. LYGOSOMA ANGUINOIDES Blgr.

Bangsaphan (South-western Siam); Maprit (Peninsular Siam).

63. TROPIDOPHORUS YUNNANENSIS Blgr.

Khao Pleung and Muang Song forest, Pre, (Northern Siam.)

64. TROPIDOPHORUS COCHINCHINENSIS (Dum. & Bib.).

Khao Sebab, Chantabun (South-eastern Siam).

65. Isopachys gyldenstolpei Lönnberg.
Koh Lak and Hua Hin (South-western Siam).

Dibamidæ.

66. Dibamus novæ-guineæ Dum. and Bib.
Patani (Peninsular Siam).